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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,459	12/12/2003	Evan Kirshenbaum	200207642-1	9694

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EXAMINER	
WONG, LUT	
ART UNIT	**PAPER NUMBER**
2129	

NOTIFICATION DATE	DELIVERY MODE
01/23/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
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Office Action Summary	Application No.	Applicant(s)	
	10/734,459	KIRSHENBAUM, EVAN	
	Examiner	Art Unit	
	LUT WONG	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In view of the appeal brief filed on 8/18/08, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/David R Vincent/

Supervisory Patent Examiner, Art Unit 2129

This office action is responsive to an Appeal Brief filed 8/18/08 and an AMENDMENT entered 8/18/08 for the patent application 10/734458.

Status of Claims

Claims 1-10 are pending.

Response to Arguments

Applicant's arguments have been fully considered and are persuasive. Therefore, previous 102 rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Paris et al.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Paris et al (Applying Boosting Techniques to Genetic Programming" Jan 2002). Examiner Notes (EN) and related citations are denoted in parenthesis.

In general, applicant's inventive concept is combination of evolutionary strategy with boosting. Paris teaches such concept and name it GPboost.

Claim 1. (Previously Presented) Paris anticipates a processor-based method for determining difficulty measures for training cases used in developing a solution to a problem, comprising:

providing a set of training cases having respectively associated difficulty measures (learning set. See e.g. section 4.2 on

) ;

operating a candidate solution on a particular training case (running cases. See e.g. section 4.2 on

);

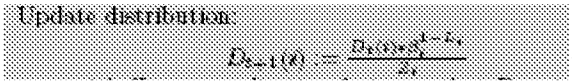
determining a performance measure of the candidate solution operating on the particular training case (fitness. See e.g. section 4.2. on

);

determining a credibility rating of the candidate solution, the credibility rating indicating a degree to which the performance measure is representative of the difficulty measure of the particular training case (See e.g. section 4.2 on

EN: credibility reads on confidence); and

modifying the difficulty measure of the particular training case based on the performance measure of the candidate solution operating on the particular training case and the credibility rating of the candidate solution (See e.g. section 4.2. on



).

Claim 2. (Original) The method of claim 1, wherein determining the credibility rating comprises:

selecting one or more training cases from the set of training cases based on the difficulty measures of the one or more training cases (*EN: merely repeating the process.* See e.g. section 4.2 on For $t = 1, T$ do);

determining performance measures of the candidate solution operating on each of the one or more training cases (*EN: merely repeating the process*. See e.g. section 4.2 on For $t = 1, T$ do); and

computing the credibility rating based on the performance measures of the candidate solution operating on each of the one or more training cases *(EN: merely repeating the process*. For $t = 1, T$ do).

Claim 3. (Original) The method of claim 2, wherein the one or more training cases does not include the particular training case (See e.g. section 4.2 that the distribution after first iteration is non-uniform. This means some training cases are not included. In particular, Initialize $D_1(i) = 1/m$ for all $(x_i, y_i) \in S$ indicates only a subset of *S* is used in each iteration).

Claim 4. (Original) The method of claim 1, wherein providing the set of training cases having respectively associated difficulty measures comprises initializing a difficulty measure of each training case in the set of training cases to a predetermined value (See e.g. section 4.2 on Initialize $D_1(i) = 1/m$ for all $(x_i, y_i) \in S$).

Claim 5. (Original) The method of claim 4, wherein the predetermined value is a maximum value (See e.g. section 4.2 on  . EN: 1/m reads on "maximum" value. In particular, 1/m is the normalized "maximum value").

Claim 6 (Original) The method of claim 1, wherein:

providing the set of training cases comprises *associating each training case in the set of training cases with a target output* (case label. See e.g. section 4.2 that each case has a target classification (i.e. +1 or -1 label). See also section 2.2.);

operating the candidate solution on the particular training case comprises *obtaining an output from the candidate solution operating on the particular training case* (See e.g. section 4.2 on ); and

determining the performance measure of the candidate solution operating on the particular training cases comprises *comparing the candidate solution output to a target output of the particular training case* (determining loss. See e.g. section 4.2 on ).

Claim 7. (Original) The method of claim 6, wherein comparing the candidate solution output to the target output of the particular training case comprises *calculating a value corresponding to a deviation between the candidate solution output and the target*

output of the particular training case (comparing calculated class with label. See e.g. section 4.2. on ).

Claim 8. The method of claim 1, wherein modifying the difficulty measure of the particular training case comprises modifying the difficulty measure based on a weighted average of the performance measure and a previous value of the difficulty measure (See e.g. section 4.2 on ).

Claim 9. The method of claim 8, wherein a weight of the weighted average is based on the credibility rating and a base learning rate (See e.g. section 4.2. on ).

Claim 10. (Original) The method of claim 1, wherein modifying the difficulty measure comprises maintaining the difficulty measure within a predetermined interval (See e.g. section 4.2 that the weight of each training example are "maintained" with a predetermined interval (for exactly 1 rounds)).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following reference also teaches the idea of combining genetic algorithm with boosting.

Liu et al ("Improving Genetic Classifiers with a Boosting Algorithm" 2003).

Hitoshi Iba ("Bagging, Boosting, and Bloating in Genetic Programming" 1999).

Nock et al ("A boosting-based prototype weighting and selection scheme" 2000).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUT WONG whose telephone number is (571)270-1123. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent David can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lut Wong/
Examiner, Art Unit 2129
/David R Vincent/
Supervisory Patent Examiner, Art Unit 2129